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**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)
Annual Assessment of the Status of)
Competition in the Market for the)
Delivery of Video Programming)

CS Docket No. 95-61

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JUN 30 1995
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

**COMMENTS OF
THE NATIONAL CABLE TELEVISION ASSOCIATION, INC.**

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The National Cable Television Association, Inc. ("NCTA") hereby submits its comments regarding the Commission's second annual report to Congress on the status of competition in the multichannel video programming market. NCTA is the principal trade association of the cable television industry, representing the owners and operators of cable systems serving 80 percent of the nation's 60 million cable households. Its members also include cable programming networks, cable equipment manufacturers and others affiliated with the cable television industry.

INTRODUCTION AND SUMMARY

In its Notice of Inquiry ("NOI"), the Commission seeks information to fulfill its statutory obligation under the 1992 Cable Act to report to Congress on the status of competition in the delivery of video programming.¹ In

¹ Cable Television Consumer Protection and Competition Act of 1992, Pub. L. No. 102-385, 106 Stat. 1460 (codified as amended at 47 U.S.C. §§ 521, 548(g) (1992)).

preparing its 1995 Competition Report, the Commission has articulated three primary goals: (1) to analyze the current status of competition by identifying existing and potential competitors to cable systems; (2) to evaluate changes in the "dynamic and evolving" video programming marketplace; and (3) to assess the economic framework for analyzing competition in the video programming market, (including the relevant product and geographic markets for delivered video programming, and market structure).²

Last year, the Commission concluded that while competitors to cable were emerging, a truly competitive environment for multichannel video programming had not yet arrived.³ We believe that competition to cable has taken off this year, and it is growing rapidly. This competition takes the form of direct broadcast satellite services (DBS), microwave-based wireless cable systems (MMDS), telephone switched video, C-band satellite television, and potential growth in broadcast television services. DBS service has emerged as one of the fastest introductions ever of a new consumer electronics product. Local telephone companies are moving forward with their plans to construct "video dialtone" and traditional cable facilities. Telephone companies are also venturing into wireless MMDS services, contributing to their expected rapid growth in the immediate future. And the courts and Congress are moving steadily toward opening the video market to local telephone companies.

All of this is occurring in the midst of unprecedented technological breakthroughs in digital compression technology and related advancements

² NOI at 4-5, ¶¶ 5-9.

³ Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, First Report, 9 FCC Rcd. 7442, 7449-50, ¶¶ 11-16 (1994).

that will bring new choice and flexibility to television viewers. Every video provider, both wired and wireless, is preparing to integrate digital technology into their systems to enhance their capabilities. We urge the Commission not to impede innovation in this field by adopting digital standards before the technology has stabilized. The Commission also should not dictate the retail availability of set top decoder equipment given the serious danger that this poses for the security and integrity of the cable system.

Given the recent dramatic changes in the multichannel video marketplace, the current statutory definition of "effective competition" is no longer viable. Under the existing standard, rate regulation stays in place until a cable company loses a crippling 15 percent of its market share. In reality, cable companies will respond to competitive pressures brought by any alternative provider whose services are widely available and who is a viable contender, regardless of the market share that the alternative provider has actually captured. NCTA urges the Commission, therefore, to recommend to Congress that the definition be revised to take into account existing and potential competitors, rather than looking to an arbitrary measure of market share.

Part One of this document discusses the rapidly changing competitive landscape in the past year since the 1994 Competition Report. Parts Two and Three respond to questions and update information in the NOI concerning, inter alia, the impact of technological developments and changes in market structure. Part Three provides recommendations to the Commission on promoting a competitive video marketplace.

I. COMPETITION TO CABLE TELEVISION IS HERE TODAY AND GROWING RAPIDLY

Competition to cable television is here today, and every indicator suggests it will continue to grow rapidly in the near future. This competition takes the form of direct broadcast satellite services (DBS), microwave-based wireless cable systems (MMDS), telco-switched video, C-band satellite television, and potential growth in broadcast television services.

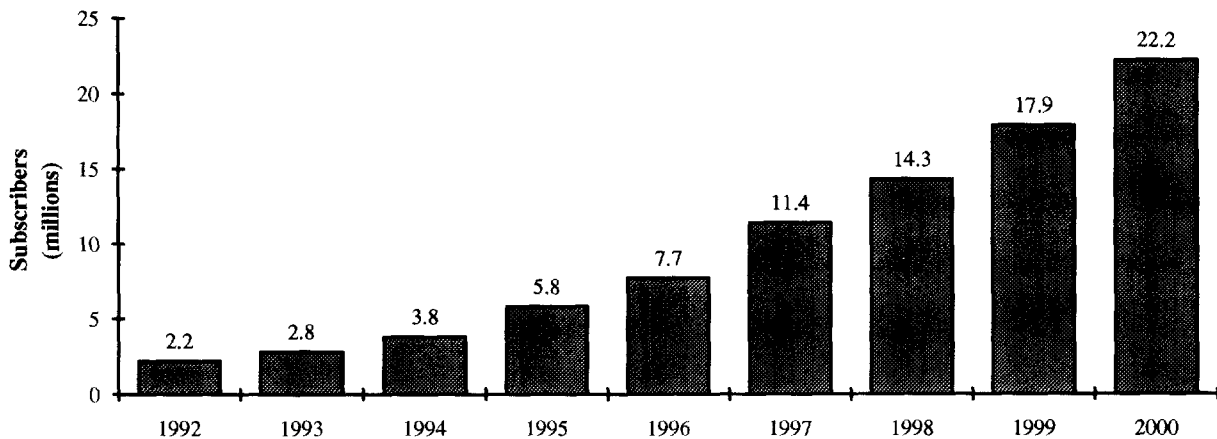
In the past year DBS service has emerged as one of the fastest introductions ever of a new consumer electronics product, and cable companies are already feeling its effects. Meanwhile, the local telephone companies are moving forward with their plans to construct "video dialtone" and traditional cable facilities, as well as to develop wireless services -- all of which will deliver multichannel video services in competition with the cable industry. Moreover, the courts and Congress are moving steadily toward opening the video market to local telephone companies. These trends are aided by the "program access" provisions of the 1992 Cable Act, which require vertically-integrated cable programmers to offer their services to all distributors at non-discriminatory terms and conditions.

These competitive forces have a strong effect on cable companies. It is well-recognized in economic theory that not only current competitors, but also potential competitors influence the behavior of firms. Consequently, the presence of these considerable -- and growing -- competitive forces to cable will constrain prices for cable television. (See appendix, "Market Shares and Effective Competition.")

The following data and graphs illustrate the historical and projected growth of these competitors to cable television.

- The total number of subscribers to cable's competitors is projected to grow by 300 percent, to 22.2 million subscribers, within five years.
- Notably, while over 5 million consumers purchase multichannel video service from cable's competitors, the number of residential consumers who purchase competitive local telephone service today is essentially zero.
- In the next five years, the market share of cable's competitors is expected to nearly triple to 25 percent of the total multichannel video market.

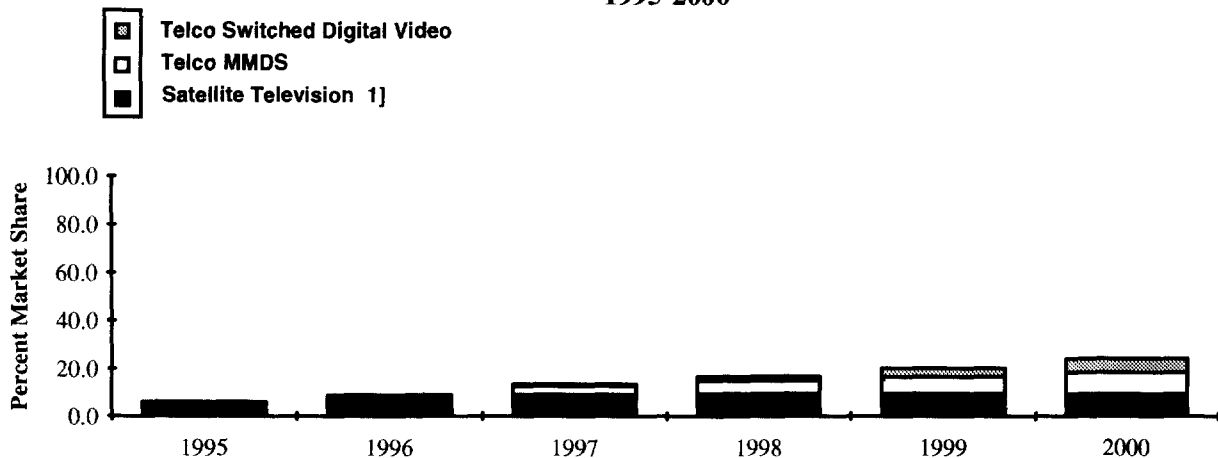
**Projected Subscriber Growth of Cable Television's
Multichannel Competitors
1992-2000
(millions)**



Note: 1992-1994 includes C-Band, MMDS, and SMATV services. 1995-2000 includes Satellite TV (high and medium powered DBS, including Primestar, and C-Band services), Telco MMDS, Telco Switched Digital Video, SMATV (including those owned by cable companies), and non-telco affiliated MMDS.

Source: Paul Kagan Associates, Cable TV Investor, May 31, 1995, p.6., and Marketing New Media, December 20, 1993, p.4 and December 15, 1994, p.4.

**Projected Market Shares of Cable Television's
Multichannel Competitors
1995-2000**



1] Includes high and medium powered DBS (including Primestar) and C-Band satellite services.

Note: 100 percent equals total multichannel marketplace which is expected to grow from 67.5 million subscribers in 1995 to 88.7 million subscribers in 2000.

Source: Derived from Paul Kagan Associates, *Cable TV Investor*, May 31, 1995, p.6.

A. Competition from Satellite-Delivered Services

Cable companies face considerable competition from both high-powered, direct broadcast satellite services (DBS) and from low-powered C-band services. Today there are approximately five million C-band satellite dishes receiving multichannel television service nationwide.⁴ And DBS, the newest form of satellite-delivered service, clearly represents a significant form of competition to the cable television industry.

DBS companies offer multichannel video service directly to consumers via a small satellite receiving dish. DBS services that deliver up to 150 channels of traditional cable networks and pay-per-view are now available to every home in the continental U.S. DBS providers deliver virtually every

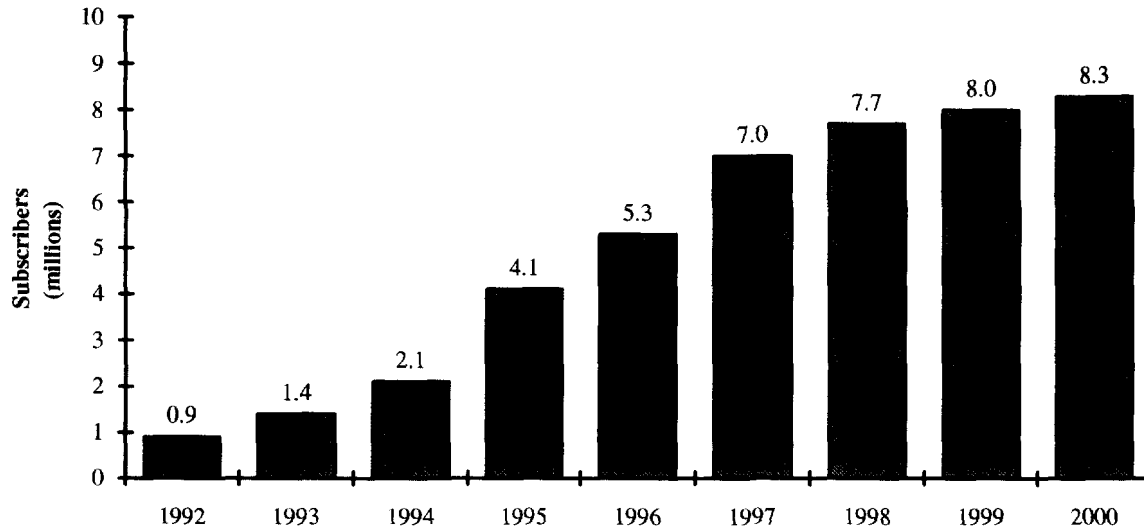
⁴ Among those satellite dish owners, approximately 2.3 million are currently authorized to receive service.

program network offered on cable, including movies, sports, and dozens of channels of pay-per-view movies. They are assured access to cable programming through the program access provisions of the 1992 Cable Act. DBS providers also are developing and acquiring exclusive programming. For example, DirecTV has exclusive rights to offer 400 NBA games this season and approximately 700 games next season.

- At the end of 1994, USSB and DirecTV (non-cable-affiliated DBS providers) reported adding some 2,000 new subscribers a day.
- DBS companies are well funded by major U.S. corporations and can be expected to remain viable in the long term. DirecTV's parent company, GM/Hughes Electronics, has annual revenues of approximately \$14 billion and has already committed \$700 million to DirecTV over the past decade.
- A third DBS provider, Echostar, is expected to begin service November 1, 1995. In May, Echostar announced an initial public offering of \$80 million to raise additional capital to launch its service.
- DBS is attracting a wide range of customers, including those in areas served by cable. Half of DBS subscribers are from urban areas already passed by cable, according to DirecTV's initial findings of their new subscribers, as well as other industry executives.
- It is estimated that non-cable-affiliated DBS companies will have approximately 2.2 million subscribers by the end of this year, and 5.1 million by 2000 -- an increase of more than 130 percent in just five years.

"I think it's totally plausible that [DBS will be] in the ten-to-fifteen-million-home range within the next ten years. There are even more aggressive estimates that it could be as high as twenty to thirty million homes in the next ten years." -- Satellite Business News editor Bob Sherman, June 21, 1995.

**Projected Subscriber Growth of Satellite TV
1992-2000
(millions)**



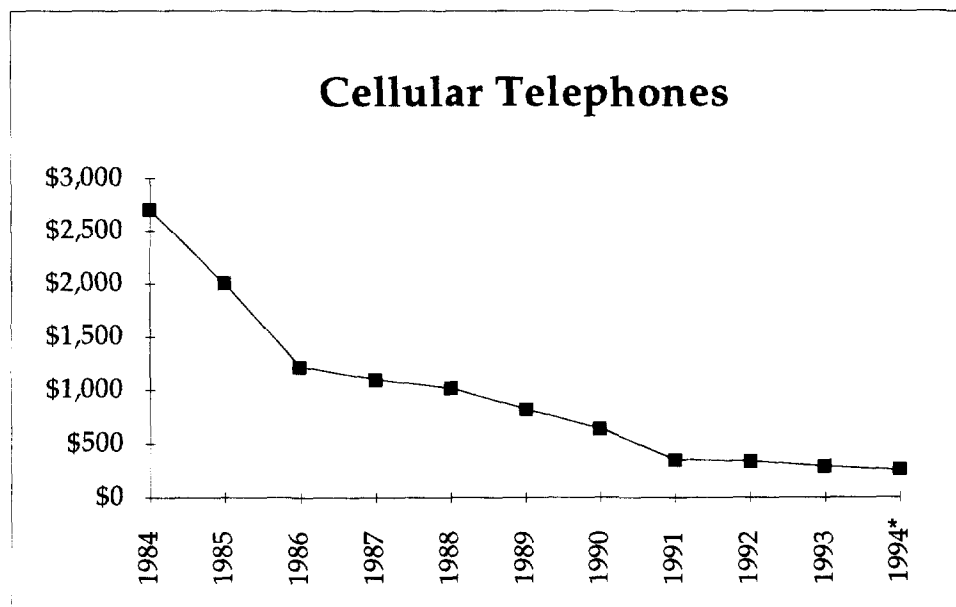
Note: 1992-1994 includes C-Band services. 1995-2000 includes high and medium powered DBS (including PrimeStar) and C-Band satellite services.

Source: Paul Kagan Associates, Cable TV Investor, May 31, 1995, p.6 and Marketing New Media, December 20, 1993, p.4 and December 14, 1994, p.4.

The cost of DBS satellite dishes today is sometimes regarded as an impediment to its widespread acceptance as a competitive alternative to cable. However, the cost of DBS satellite dishes is expected to quickly decline. And DirecTV is now offering a financing package that makes both DBS equipment and services available to consumers for under \$30 a month.

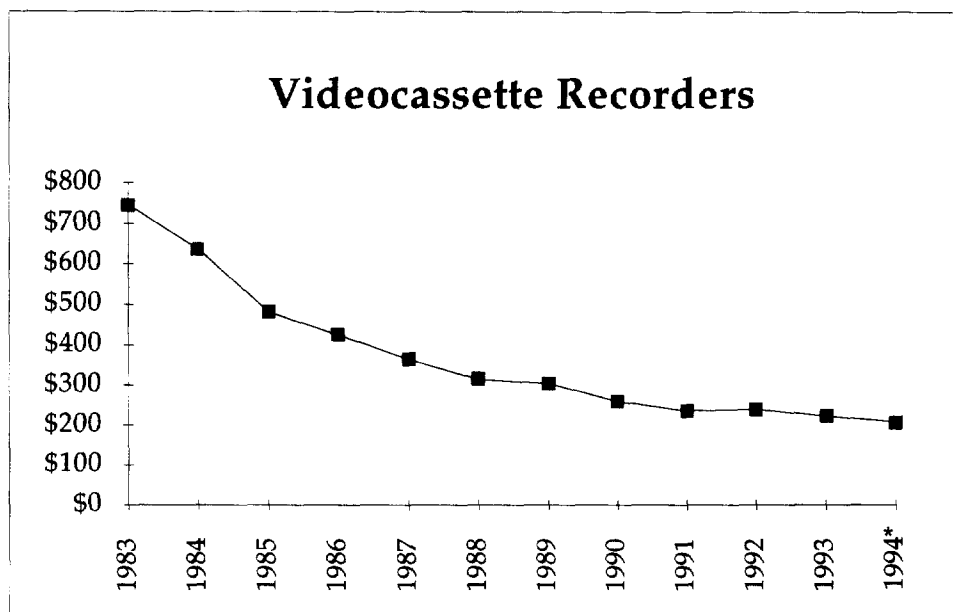
RCA/Thomson manufactured its one-millionth unit in April 1995. As a consequence, competing manufacturers have been authorized to enter the market. While dishes currently cost approximately \$700, new competition from alternative manufacturers is expected to result in rapidly declining dish prices.

- Sony is making DBS dishes available to consumers this month (June 1995.) Sony will focus on marketing to urban markets, apartment dwellers, and other areas with high cable penetration.
- Toshiba, Uniden, and Hughes Network Systems have also been authorized to supply satellite dishes. Hughes is expected to introduce equipment in early 1996, while Uniden and Toshiba are expected to enter the market in mid-1996. The entrance of these three new satellite dish manufacturers to the market in 1996 may cause dish prices to drop as low as \$399.
- Dish prices are expected to drop significantly because, as recent history shows, the prices of consumer electronics decline dramatically shortly after their introduction. In only two years, for example, the average real prices of cellular telephones and VCRs declined 55% and 35%, respectively.



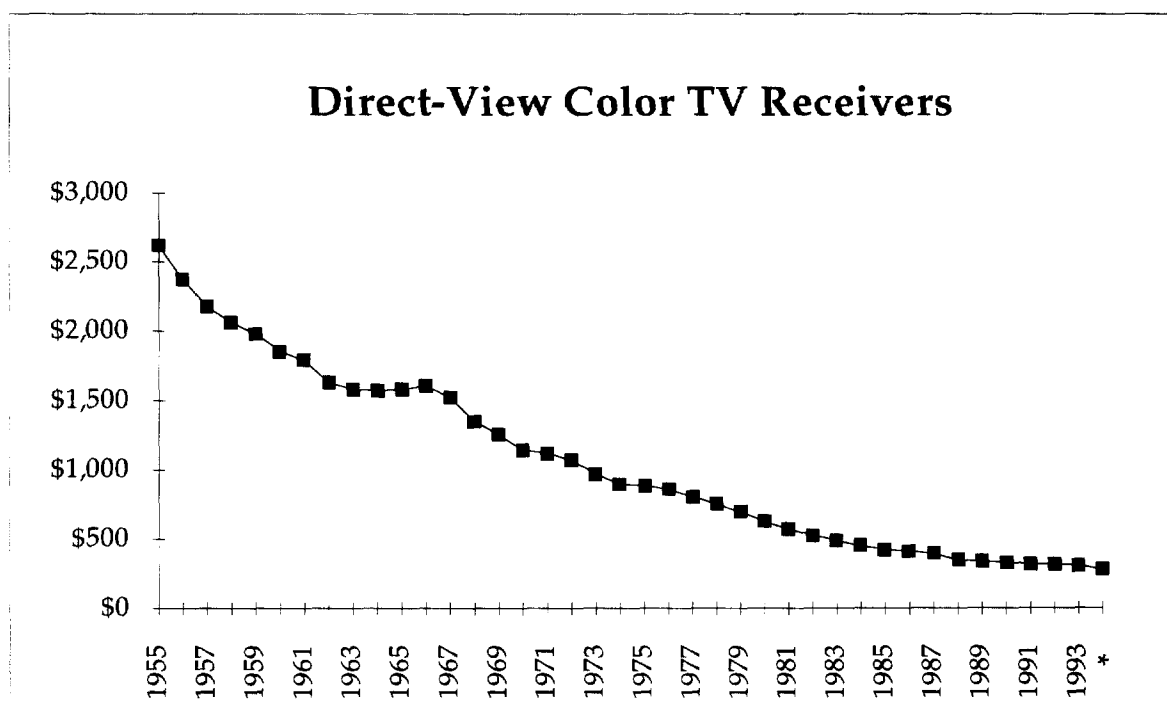
* Estimate

Source: Electronic Industries Association, *Economic Report of the President*



* Estimate

Source: Electronic Industries Association, Economic Report of the President.



* Estimate

Source: Electronic Industries Association, Economic Report of the President.

B. Competition from Telco-Delivered Video Programming

When Congress adopted the Cable Act of 1992, it also maintained the bar on phone companies from competing with cable in video services. But now the courts have lifted the cross-ownership ban for all RBOCs (except Southwestern Bell), GTE, and all other members of USTA. Ameritech, for example, was recently granted a cable TV franchise in suburban Detroit to deliver services to 37,000 homes. The telco plans to begin offering service in early 1996, and has indicated that it intends to reach similar agreements in other communities in the very near future.

Moreover, many phone companies have received approval to deliver video services directly to consumers through video dialtone facilities, and many more VDT proposals are still pending. And Congress is actively considering legislation that will allow the local telephone companies to program and deliver video services themselves -- in essence, to act as cable operators.

These legislative and legal measures will unleash extraordinarily powerful competitors to the cable television industry. Video dialtone, for example, poses an enormous competitive challenge to cable companies, particularly in view of the telephone industry's ready access to capital, tremendous market power, and ubiquitous access to telephone consumers.

The telephone industry is plainly committed to aggressively pursuing video competition to the cable industry. While some firms have recently announced changes in their particular approaches, they continue to emphasize that their plans remain basically unchanged. Certain aspects of the regulatory arrangements remain unsettled at this time, but there is nothing uncertain about the telephone companies' resolve. Telephone companies intend to offer video services in direct competition with cable.

"I would say that by 2000, we'll have 50 percent of the cable TV business -- no doubt about it... Meanwhile, the cable companies won't have even three percent of telephony revenues in their best market." -- Bell Atlantic CEO Raymond Smith, Wired, February 1995.

Approved Sections 214 Video Dialtone Applications

Telephone Company	Community	Total Homes Approved
Bell Atlantic	Arlington, VA	2,000
New Jersey Bell Telephone	Dover Township, NJ	38,000
Southern NE Telephone	Northern/Southern, CT	150,000
US West	Omaha, NE	60,000
Ameritech	Detroit, MI	232,000
Ameritech	Columbus, OH Cleveland, OH	262,000
Ameritech	Indianapolis, IA	115,000
Ameritech	Chicago, IL	501,000
Ameritech	Milwaukee, WI	146,000
Contel of Virginia dba GTE VA	Manassas, VA	147,210
GTE Florida	Pinellas Co., Pasco FL	554,374
GTE California	Ventura, Co., CA	145,663
GTE Hawaiian Telephone Co.	Honolulu, HA	522,124
New England Telephone	East Providence, Warren, Warwick, RI	63,000
New England Telephone	Boston, MA	334,000
Bell South	Chamblee/Dekalb Co., GA	12,000
Total Approved VDT Homes		3,284,371

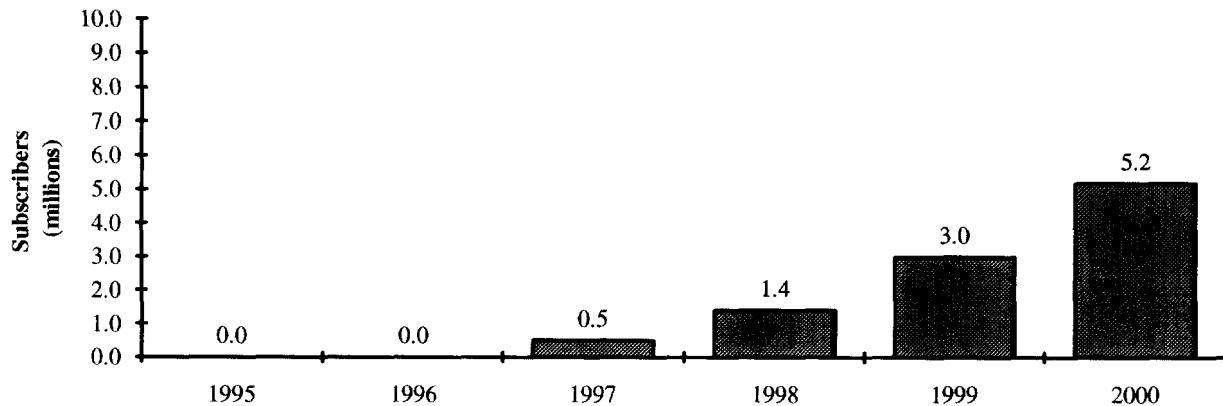
Source: Telephone Company responses to FCC Section 214 Application data requests. (various)

Pending Section 214 Video Dialtone Applications

Status	Name	Community	Total Homes Applied For
Pending	New Jersey Bell Telephone	Florham Park, NJ Madison Borough, NJ Chatham Borough, NJ	11,700
Pending	Pacific Bell	Orange Co., CA	210,000
Pending	Pacific Bell	South San Francisco, CA	490,000
Pending	Pacific Bell	Los Angeles, CA	360,000
Pending	Pacific Bell	San Diego, CA	250,000
Pending	Southern NE Telephone	State of Connecticut	1,500,000
Total	Homes		2,821,700

Source: Telephone Company responses to FCC Section 214 Applications date request. (various)

**Projected Subscriber Growth of Telco Switched Digital Video
1995-2000
(millions)**



Source: Paul Kagan Associates, Cable TV Investor, May 31, 1995, p.6.

C. Competition from Wireless Cable

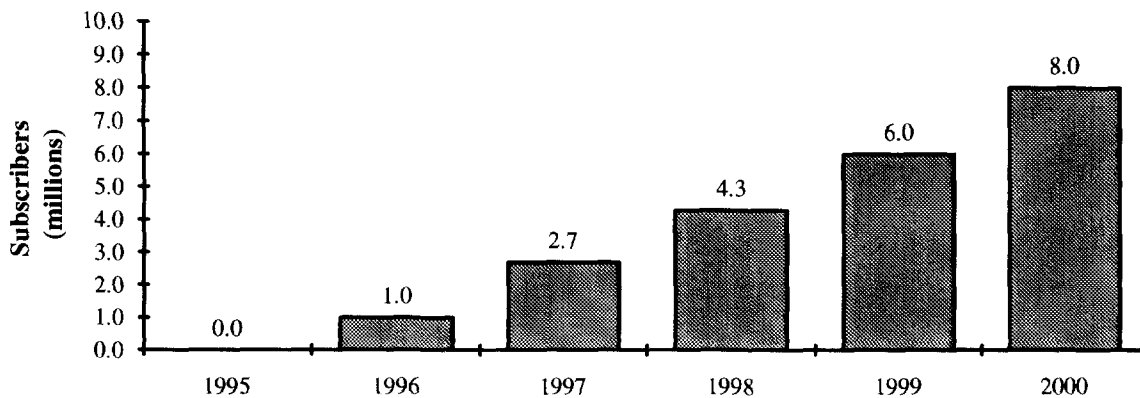
MMDS services, or microwave-based wireless cable systems, are experiencing rapid growth as well. Wireless cable providers currently serve about 600,000 subscribers nationwide; and subscribership is expected to increase to over 8 million by the year 2000.

Much of this projected growth can be attributed to recent investments in MMDS services by three Bell companies -- Bell Atlantic, NYNEX, and PacTel. Bell Atlantic has stated it expects to deliver 100 channels of video programs to 70 percent of the homes in the Washington, D.C. region via MMDS by the end of 1996.

Recent regulatory measures have aided the growth of wireless cable services. Program access rules, for example, give wireless companies and others unprecedented access to cable programming services under non-

discriminatory terms and conditions. Furthermore, the FCC has authorized wireless operators to access additional channels to increase their service offerings.

**Projected Subscriber Growth of Telco MMDS
1995-2000
(millions)**



Source: Paul Kagan Associates, Cable TV Investor, May 31, 1995, p.6.

D. Competition from Broadcast Television

Free, over-the-air broadcast television continues to represent a significant competitive alternative to cable television service. Today, 35 percent of television homes rely on broadcast television rather than purchase cable service. Through a combination of new technology and regulatory policy, however, a far greater number of broadcast services may soon be available to viewers. Such an increase in broadcast signals would make broadcast television an even greater competitive challenge to cable television companies.

In 1992, the FCC tentatively decided to allocate six megahertz of new spectrum to existing TV licensees, in order to aid their transition to HDTV

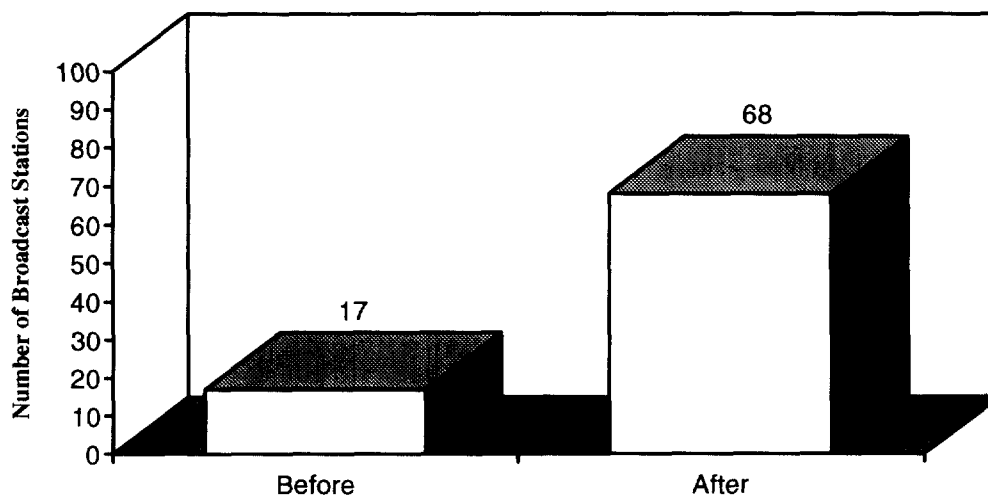
technology. Since then, some broadcasters have expressed an interest in using that additional spectrum for other uses, rather than a transition to HDTV.

Digital technology would allow broadcasters to deliver several television signals (four to six, by current estimates) over the amount of spectrum currently required by one analog signal. Consequently, if broadcasters are granted "spectrum flexibility," or the opportunity to use the additional spectrum as they wish, the number of broadcast television signals available in any market could dramatically increase through the use of digital technology.

Telecommunications legislation passed by the Senate and pending in the House would grant such spectrum flexibility to broadcasters. The following charts illustrate how the number of broadcast television stations might grow both nationally and in the Washington, D.C. market through a combination of digital technology and policies allowing spectrum flexibility.

**Number of Broadcast Stations Before and After Legislative
Provisions Allowing Spectrum Flexibility**

Washington, D.C. Market

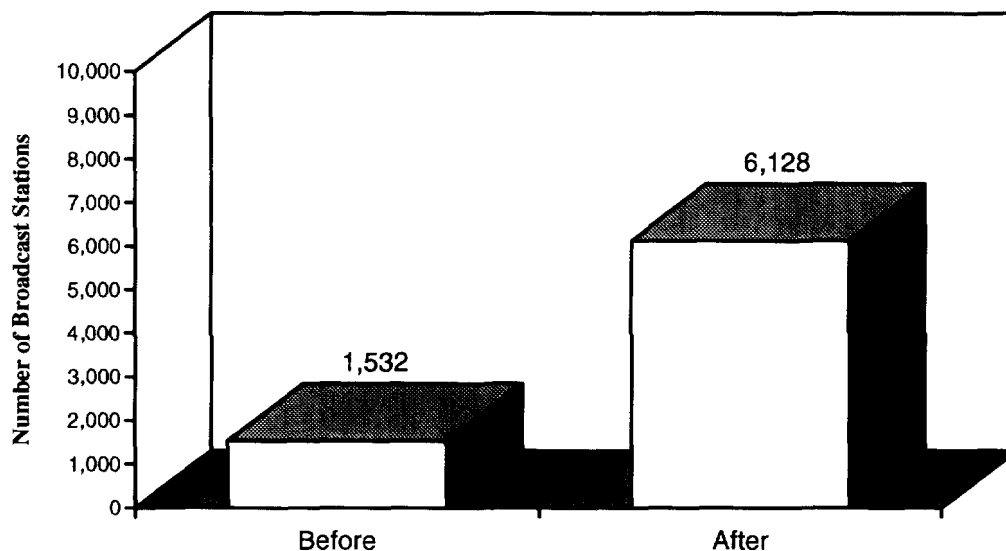


Note: Includes all commercial and educational full power broadcast stations.

Potential number of broadcast stations after legislation assumes an increase in broadcast stations is due to a lack of analog interference and a very conservative 2:1 digital compression ratio.

**Number of Broadcast Stations Before and After Legislative Provisions
Allowing Spectrum Flexibility**

Nationwide



Note: Includes all commercial and educational full power broadcast stations.

Potential number of broadcast stations after legislation assumes an increase in broadcast stations is due to a lack of analog interference and a very conservative 2:1 digital compression ratio.

In summary, competition to cable television is growing rapidly on all fronts. While cable companies face significant competition today in the form of DBS, MMDS, and C-band satellite services, their competitive challenges will grow even larger as telcos enter the market and as current providers expand their reach.

II. ALL VIDEO COMPETITORS WILL BENEFIT FROM ADVANCEMENTS IN DIGITAL TECHNOLOGY

As the Commission recognizes, recent technological developments are rapidly changing the competitive video marketplace. The cable industry and competing video distribution media are actively deploying various

advancements in network capacity, efficiency and functionality that will provide consumers with greater choice and flexibility. While these efforts are accelerating in response to scientific and public policy forces, they are still at an evolutionary stage. It is clear, however, that every video provider, both wired and wireless, will benefit from these advancements and that some providers with historically limited capacity will gain competitive strength.

Over the past year, the cable industry -- in the face of new competitive challenges -- has sought to overcome regulatory, legal and financial obstacles to its ability to build the information highway of tomorrow. The industry pioneered the hybrid fiber-coaxial cable architecture that provides consumers with improved signal quality and network reliability and two-way telecommunications service at costs lower than installing fiber to the home. As the cable industry upgrades its infrastructure by integrating fiber optic trunk lines into traditional cable networks, several telephone companies, including Southern New England Telephone, are deploying extensive hybrid fiber-cable architecture to deliver broadband video to customers in their service areas.

Cable operators also have begun constructing regional fiber optic networks to link cable systems to "regional hub" sites, thereby enabling operators in the same region to share services, such as switching, video storage, signal compression and network management, without utilizing separate high-cost headend equipment. The regional hub concept is designed to facilitate the delivery of new services to subscribers faster and cheaper, and to allow interconnection with other telecommunications services. Regional hub systems are currently underway in Orlando, Denver, San Francisco, Boston, Long Island, and many other areas.

Digital compression technology will be deployed to vastly increase cable channel capacity and further enhance program and service offerings, including pay-per-view and video-on-demand services, multiplexing and high definition television. It also will facilitate cable's ability to provide telephony and other telecommunications services. We urge the Commission not to hamper the introduction of these technological advancements by proposing to adopt digital standards.

A. Premature Adoption of Standards Will Impede Digital Conversion

The NOI seeks information on the impact of digital compression and related advancements on the various distribution media. The most profound effect of this technology, as the Commission points out, is that it reduces the amount of information needed to transmit pictures, audio and text, thereby greatly increasing the capacity of distribution networks. It is possible to fit six to ten times the number of digital channels into the same spectrum occupied by just one analog channel.⁵

Digital compression techniques have already influenced competition in the video marketplace. DBS is flourishing now that it became feasible to multiply the number of DBS channels from 20-35 to over 100 through digital compression. Today's 30-plus-channel MMDS system is likely to deliver hundreds of digital channels, making it a more powerful competitive

⁵ This is accomplished by digitizing and compressing the signals and then modulating the digital "bits" for transmission. Using the DigiCypher and MPEG II approaches, it is possible to provide good quality video at data rates ranging from one and a half million bits per second to three million bits per second. Fast action sports programming may require six to eight million bits per second. A variety of modulation methods have been developed which facilitate the carriage from 18 to 38 million bits per second in the same spectrum that carries only one analog channel.

alternative to both cable and DBS. Similarly, HSD and SMATV systems are looking to increase their capacity with digital technology.

The telephone companies are committed to offering video services in competition with cable through various approaches that will take advantage of digital technology. Some companies intend to build video dialtone platforms or wireless systems to deliver hundreds of channels, while others intend to transform their plant to switched digital video. Moreover, the telephone industry is working on combining digital compression and storage and switching techniques to enable subscribers to access a large number of programs over the existing copper twisted-pair wire.

In addition to movies and other entertainment programming, all video providers expect to utilize digital technology to cost-effectively transmit data, including text services, on-line services, electronic program guides, and messaging services, to the home or business. The high capacity of digital transmission makes it possible to store and retrieve data and apply switching techniques that will allow customers to select programming on demand.

In sum, every competitor is likely to leverage efficiencies generated by digital compression to maximize service offerings and lower the cost of bundled services. And, as noted above, distribution media with inherent limitations will increase their information-carrying capacity. But it is too soon to predict whether any video provider will derive a greater benefit from digitization than others. There are so many other factors that come into play in the competitive balance that the implementation of digital technology alone is not likely to be decisive.

The NOI identifies a number of potential barriers to the transition to digital compression technology. First, it notes the lack of a standard industry-wide digital encoding scheme. We believe, however, that the

absence of a standardized encoding scheme, as opposed to a transmission scheme, is not an impediment to the migration to digital. For example, in the analog world, television systems have been delivering 35 mm film for decades -- although the mediums of television and film are entirely different. Celluloid film is produced in 24 frames per second, while television transmits in 30 frames per second. Converting film for electronic transmission did not present a significant cost barrier.

Furthermore, the very nature of digitized signals -- a series of ones and zeros -- makes the conversion between encoding schemes relatively simple and cost-effective. Standardization would only chill innovation in this field, especially when it is not necessary for efficient delivery of video service.

Similarly, the Commission points to the unavailability of digitally encoded programming as a potential barrier to digital conversion. Although there are costs associated with converting programming to a digital format, this conversion only has to be done one time and the cost is spread over millions of viewers. The cost of converting the transmission network -- satellite uplink facility, studio facility, transmitters, headends, etc. -- far outweighs the cost of formatting programming at the origination point. The implementation of digital technology will be driven by a cost-benefit analysis of its potential to enhance the distribution network. The lack of digitally encoded programming is not likely to slow down this process. Moreover, analog programming will continue to be distributed for quite some time because of the number of analog receivers (television sets, VCRs) that will be in use.

In our view, a more likely barrier to deployment of digital compression technology would be the adoption of digital standards at this juncture. Digital technology and its applications are still in the early stages of